Amend.

that are obtained, at least in part, from a model of an ion beam path and a vacuum system in the implantation system.

REMARKS

Claims 1-34 are pending. By this amendment, claims 15 and 30 are amended to correct typographical errors.

The telephone interview of March 21, 2001 is made of record. The courtesies extended by Examiner Stevenson to Applicant's representative Mr. Hunt during the interview are gratefully acknowledged. The subject of discussions during the interview are incorporated into the following remarks.

I. Restriction Requirement

A telephone restriction requirement was made on December 8, 2000, during which Applicant provisionally elected to prosecute claims in Group II (claims 16-30) with traverse. A confirmation of the provisional telephone election was filed December 8, 2000.

No written reasons for the telephone restriction requirement have been made. Thus, Applicant's provisional election with traverse stands until written reasons for the restriction requirement are made. Applicant again points out that claim 16 is a linking claim that links Groups I and II. Thus, upon allowance of claim 16, the restriction requirement is expected to be withdrawn and the claims in Group I (claims 1-15 and 31-34) will be additionally considered. Please see MPEP 809.03.

II. Return of Initialed Form PTO-1449

Applicant requests that an initialed copy of the Form PTO-1449 filed with the August 10, 2000 Information Disclosure Statement be returned to the Applicant indicating that the listed references have been considered. Such an initialed copy of the PTO-1449 was not attached to the January 9, 2001 Office Action.

III. Claims 16-30 Define Patentable Subject Matter

Page 2 of the Office Action rejects claims 16-30 under 35 USC §102(e) as unpatentable over U.S. Patent No. 6,101,971 to Denholm, et al. The rejection is respectfully traversed.

Applicant respectfully submits that Denholm does not disclose all of the features of claims 16 and 17. For example, Denholm does not disclose adjusting an ion implantation parameter to compensate for vacuum fluctuations based on an ion beam current reference level and a measured ion beam current, and not based on a detected pressure, as set forth in claim 16. Denholm also does not disclose a controller that detects a vacuum fluctuation based on a detected ion beam current, as set forth in claim 17.

What is meant in claim 16 by "adjusting...to compensate for vacuum fluctuation" is that an adjustment is made to at least one ion implantation parameter to correct for or overcome the effects of vacuum fluctuation, such as adjustments to make the implantation more uniform when vacuum fluctuation threatens to affect implantation uniformity. Thus, claim 16 is intended to cover systems in which an ion implantation parameter is adjusted based on a measured beam current (and not a detected pressure) to compensate for (i.e., attempt to correct for or overcome the effects of) vacuum fluctuation. Although Denholm discloses adjusting ion beam parameters during implantation, such changing beam current, to compensate for various factors, Denholm does not teach adjusting any ion implantation parameter to compensate for vacuum fluctuations during implantation, much less adjusting an ion implantation parameter to compensate for vacuum fluctuations based on a measured beam current and not based on a detected pressure. That is, there is no suggestion in Denholm that the ion implantation parameters that are adjusted would in any way compensate for vacuum fluctuation. Similarly, Denholm does not teach detecting a vacuum fluctuation based on a detected ion beam current. In fact, Applicant is unaware of any reference that teaches detecting vacuum fluctuation based on an ion beam current. This is particularly true of Denholm, in which there is absolutely no teaching that a vacuum fluctuation can be detected based on a detected ion beam current, or that ion implantation parameter adjustments can be made to compensate for vacuum fluctuation based on a measured ion beam current, and not a detected pressure.

Accordingly, Applicant respectfully submits that claims 16 and 17, and claims 18-30 which depend from claim 17, are allowable for at least the reasons set forth above. Withdrawal of the rejection of claims 16-30 under 35 USC §102(e) is respectfully requested.

IV. Conclusion

Applicant submits that this application is in condition for allowance. Favorable consideration and prompt allowance of claims 16-30, a withdrawal of the restriction requirement between Groups I and II based on the allowance of linking claim 16, and subsequent allowance of claims 1-15 and 31-34 are requested.

Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, the Examiner is invited to contact the Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,
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By: _____

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Docket No. V0077/7134
Date: April 6, 2001
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15. (Amended) The method of claim 14, wherein the step of using a scale factor comprises:

using a scale factor that [as] has been determined based on calculated beam path length [*neutral] neutral particle density products that are obtained, at least in part, from a model of an ion beam path and a vacuum system.

30. (Amended) The apparatus of claim 29, wherein the controller uses a scale factor that has been determined based on calculated beam path length [*neutral] neutral particle density products that are obtained, at least in part, from a model of an ion beam path and a vacuum system in the implantation system.